What is claimed is:

1. A curable acrylate coating composition comprising at least two polyfunctional acrylate derivatives; a photoinitiator; and a nanoscale filler.

2. The curable acrylate coating composition according to claim 1 where said at least two polyfunctional acrylate derivatives are selected from a group consisting of hexafunctional urethane acrylates, dipentaerythritol pentaacrylate, ethoxylated pentaerythritol tetraacrylate, di-trimethylolpropane tetraacrylate, pentaerythritol triacrylate, trimethylolpropane triacrylate, ethoxylated trimethylolpropane triacrylate, butanediol diacrylate, tripropylene glycol diacrylate, trimethylolpropane trimethacrylate, difucntcional urethane acrylates, tetraacrylate monomer, polyester acrylate oligomers, and combinations thereof.

3. The curable acrylate coating composition according to claim 1 wherein the polyfunctional acrylate derivatives are present in an amount such that the total amount of all polyfunctional acrylates present corresponds to between about 30 and about 95 percent by weight of the curable acrylate coating composition.

4. The curable acrylate coating composition according to claim 3 wherein the polyfunctional acrylate derivatives are present in an amount such that the total amount of all polyfunctional acrylates present corresponds to between about 50 and about 90 percent by weight of the curable acrylate coating composition.

5. The curable acrylate coating composition according to claim 2 wherein the polyfunctional acrylate derivatives comprise at least one hexafunctional acrylate derivative.

6. The curable acrylate coating composition according to claim 5 wherein said hexafunctional acrylate derivative is present in an amount corresponding to between about 0.1 and about 30 percent by weight of the curable acrylate coating composition.

7. The curable acrylate coating composition according to claim1 wherein said coating composition further comprises a solvent selected from the group consisting of aliphatic alcohols, glycol ethers, cycloaliphatic alcohols, aliphatic esters, cycloaliphatic

esters, aliphatic hydrocarbons, cycloaliphatic hydrocarbons, aromatic hydrocarbons, halogenated aliphatic compounds, halogenated cycloaliphatic compounds, halogenated aromatic compounds, aliphatic ethers, cycloaliphatic ethers, amide solvents, sulfoxide solvents.

8. The curable acrylate coating composition according to claim 7 wherein said solvent is 1-methoxy-2-propanol.

9. The curable acrylate coating composition according to claim 1 wherein said photoinitiator is activated by light having a wavelength of less than about 420 nm.

10. The curable acrylate coating composition according to claim 1 wherein said photoinitiator comprises 2,4,6-trimethylbenzoyl-diphenyl-phosphine oxide; and 2-hydroxy-2-methyl-1-phenylpropan-1-one.

11. The curable acrylate coating composition according to claim 1 wherein said nanoscale filler is selected from the group consisting of silica, zirconia, titania, alumina, ceria, and mixtures thereof.

12. The curable acrylate coating composition according to claim 1 wherein said nanoscale filler has a particle size of about 10 nanometers to about 250 nanometers.

13. The curable acrylate coating composition according to claim 1 wherein said nanoscale filler has a particle size in the range of between about 15 and about 50 nanometers.

14. The curable acrylate coating composition according to claim 1 wherein said nanoscale filler comprises silica having organic functional groups.

15. The curable acrylate coating composition according to claim 14 wherein said nanoscale filler comprises an acrylate functionalized silica.

16. The curable acrylate coating composition according to claim 1 wherein said nanoscale filler is present in an amount corresponding to between about 2 and about 15 percent by weight of the coating composition.

17. The curable acrylate coating composition according to claim 1 further comprising a UV absorber selected from a group consisting of hydroxybenzophenones,

benzotriazoles, cyanoacrylates, triazines, oxanilide derivatives, poly(ethylene naphthalate), hindered amine, formamidines, cinnamates, malonate derivatives and combinations thereof.

18. An article coated with the curable acrylate coating composition according to claim 1.

19. A curable acrylate coating composition comprising a photoinitiator, a nanoscale filler, at least one hexafunctional urethane acrylate, and at least one polyfunctional acrylate derivative.

20. The curable acrylate coating composition according to claim 19 wherein said hexafunctional urethane acrylate is a hexafunctional aliphatic urethane acrylate derivative.

21. The curable acrylate coating composition according to claim 19 wherein said at least one polyfunctional acrylate derivative is selected from a group consisting of 1,4-butanediol diacrylate, pentaerythitol triacrylate, trimethanol trimethacrylate derivatives and mixtures thereof.

22. The curable acrylate coating composition according to claim 19 wherein the at least one polyfunctional acrylate derivative is present in an amount such that the total amount of all polyfunctional acrylates present corresponds to between about 30 and about 95 percent by weight of the curable acrylate coating composition.

23. The curable acrylate coating composition according to claim 22 wherein the polyfunctional acrylate derivatives are present in an amount such that the total amount of all polyfunctional acrylates present corresponds to between about 50 and about 90 percent by weight of the curable acrylate coating composition.

24. The curable acrylate coating composition according to claim 19 wherein said hexafunctional acrylate derivative is present in an amount corresponding to between about 0.1 and about 30 percent by weight of the curable acrylate coating composition.

25. The curable acrylate coating composition according to claim19 wherein said coating composition further comprises a solvent selected from the group consisting of aliphatic alcohols, glycol ethers, cycloaliphatic alcohols, aliphatic esters, cycloaliphatic

esters, aliphatic hydrocarbons, cycloaliphatic hydrocarbons, aromatic hydrocarbons, halogenated aliphatic compounds, halogenated cycloaliphatic compounds, halogenated aromatic compounds, aliphatic ethers, cycloaliphatic ethers, amide solvents, sulfoxide solvents and mixtures thereof.

26. The curable acrylate coating composition according to claim 25 wherein said solvent is 1-methoxy-2-propanol.

27. The curable acrylate coating composition according to claim 19 wherein said photoinitiator is activated by light having a wavelength of less than about 420 nm.

28. The curable acrylate coating composition according to claim 27 wherein said photoinitiator comprises 2,4,6-trimethylbenzoyl-diphenyl-phosphine oxide; and 2-hydroxy-2-methyl-1-phenyl-propan-1-one.

29. The curable acrylate coating composition according to claim 19 wherein said nanoscale filler is selected from a group consisting of silica, zirconia, titania, alumina, and mixtures thereof.

30. The curable acrylate coating composition according to claim 29 wherein said nanoscale filler comprises silica having organic functional groups.

31. The curable acrylate coating composition according to claim 30 wherein said nanoscale filler comprises an acrylate functionalized silica.

32. The curable acrylate coating composition according to claim 19 wherein said nanoscale filler is present in an amount corresponding to between about 2 and about 15 percent by weight of the coating composition.

33. The curable acrylate coating composition according to claim 19 further comprising a UV absorber selected from a group consisting of hydroxybenzophenones, benzotriazoles, cyanoacrylates, triazines, oxanilide derivatives, poly(ethylene naphthalate), hindered amine, formamidines, cinnamates, malonate derivatives and combinations thereof.

34. A curable acrylate coating composition comprising a photoinitiator, a nanoscale filler, at least one hexafunctional urethane acrylate, and at least one additional polyfunctional acrylate derivative selected from the group consisting of 1,4-butanediol

diacrylate, pentaerythitol triacrylate, and trimethanol trimthacrylate derivatives and mixtures thereof.